will hold a meeting once a year, are as follows: Pathological Department—Dr. William H. Welch, Baltimore; Dr. Theobald Smith, Boston; Dr. H. Gideon Wells, Chicago; Dr. Simon Flexner, New York. Clinical Department—Dr. James A. Miller, New York; Dr. Lawrason Brown, Saranac Lake, N. Y.; Dr. Joseph Pratt, Boston; Henry Baird Favill, Chicago. Sociologic Department—Dr. Samuel McC. Lindsay, New York; William H. Baldwin, Washington; Dr. Herman M. Biggs, New York; Dr. Samuel G. Dixon, Harrisburg, Pa.

UNIVERSITY AND EDUCATIONAL NEWS

Announcement is made of the receipt by Western Reserve University of a gift of $250,000 by Mr. H. M. Hanna, as an addition to the endowment of the medical department. The income from this gift is to be largely used in the clinical departments to enable the school to put these departments upon a university basis.

Mr. J. Ogden Armour has made a gift of $70,000 to the Armour Institute of Technology.

Dr. Roscoe Pound, who has successively held chairs of law at the University of Nebraska, Northwestern University and the University of Chicago, has been appointed Story professor of law in Harvard University. Dr. Pound was for many years director of the Nebraska Botanical Survey and is well known for his contributions to botany.

Professor Alexander S. Langsdorf has been appointed dean of the school of engineering of Washington University, to succeed Professor Calvin M. Woodward. Professor Langsdorf will continue in active charge of the Department of Electrical Engineering.

At the annual meeting of the regents of the University of Nebraska Adjunct Professor Walker and Adjunct Professor Pool, of the department of botany, were promoted, with the title of assistant professor of botany. Professor Pool was made curator of the university herbarium, also, and to Professor Walker's duties were added those of keeper of the botanical library.

At Cornell University instructors have been appointed as follows: M. M. Goldberg, in physics (promoted); Fred MacAllister, in botany; H. W. Mayes and M. H. Givens, in physiology and biochemistry (promoted).

Dr. M. Verworn, professor of physiology at the University of Göttingen has been called to Bonn to succeed the late Professor Pflüger.

DISCUSSION AND CORRESPONDENCE

ON THE APPARENT SINKING OF SURFACE ICE IN LAKES

To the Editor of Science: During the disintegration of the surface ice in a lake in the spring it is a matter of common observation by the natives that the ice suddenly appears to sink, the surface of the lake becoming clear in a few hours. The explanation of this apparent anomaly was difficult to find until it became clear to me as a result of a careful study of the effect of water temperatures in the St. Lawrence River on the growth and decay of ice. The ice sheet which forms on the surface of quiet water becomes thicker on the underside only by the conduction of heat. The total thickness of the ice which will form in a single winter depends not only on the mean air temperature measured in degrees, but on the mean water temperature measured in thousandths of a degree above or below the freezing point.

From measurements made with my special micro-thermometer I have found that the temperature of the water just under the surface ice in a lake or deep river is usually one or two hundredths of a degree above the freezing point, due to the lower layers of warmer water.

In the spring this temperature is considerably higher and the effect of the warmer underwater rapidly honeycombs the ice, thus assisting the sun when the surface snow is absent. In a flowing river the effect of wind and current is to loosen the ice and it is soon carried down by the stream. In a quiet lake

the honeycombed ice remains intact and becomes nothing more than a collection of vertical ice needles ready to topple over at the slightest touch. Outwardly this sheet of instability appears firm and compact. During the period of rotting the temperature of maximum density is slowly advancing upwards towards the ice sheet. Below the surface of maximum density convection of heat brings more and more warm water up from the bottom. There must be then a definite surface in the water at 4° C., below which the temperature is kept fairly uniform by convection and above which there is no movement in the water to disturb the existing temperature gradient up to the ice sheet. As soon as the 4° surface reaches the under side of the already honeycombed ice the change of temperature and movement of water must be fairly sudden, causing a rapid collapse of the whole structure. This no doubt accounts for the characteristic rattling noise when the phenomenon takes place. The ice needles soon melt in the warm water, which gives rise to the general belief that the ice sinks.

H. T. BARNES

McGILL UNIVERSITY,
April 16, 1910

PLANKTON

THE article of Professor Chas. E. Woodruff in SCIENCE of April 22 recalled to me observations I had made of phosphorescence of the sea. In connection with astronomic work I have sailed many seas, and have circumnavigated the globe in completing its astronomical girdle in longitude.

In the waters along southeastern Alaska, an area of fog, rain and little sunshine, I had observed most exquisite phosphorescence of the sea. When being rowed from the government steamer ashore, every dip of the oars showed them surrounded by that delicate bluish light of phosphorescence. When I walked over the beach of the receded tide every footprint was a blaze of this same light.

Some years subsequently when I started on my work round the world I looked forward with pleasure to beholding the grand phosphorescence of the tropics, under the belief that in the warmer waters and bright sunshine, the plankton—the cause of the phosphorescence—would be more densely distributed. In this however I was sadly disappointed.

In none of the tropical seas did I see any phosphorescence that could at all compare with what I described above. In vain have I stood at night at the bow or side of the steamer on a smooth sea watching for a fine display of phosphorescence. Now and then the comb of the small wave as the vessel parted the waters showed a fringe of the bluish light, and nothing more.

Arrhenius in his "Lehrbuch der Kosmischen Physik," p. 376, says that the phosphorescence of the sea "is most beautifully developed in the tropics," which is not my experience. Major Woodruff's explanation and application to the tropics of the destructive and lethal effect of light on the plankton agrees very well with my observations on the phosphorescence of the sea in different parts of the world.

OTTO KLOTZ

OBSERVATORY, OTTAWA,
April 28, 1910

ATHANASIUS KIRCHER AND THE GERM THEORY OF DISEASE

IN reference to Dr. Riley's note in SCIENCE for April 29, I am glad to make a prompt *amende honorable* for a hasty error of commission in regard to the magnifying power of Leeuwenhoek's microscopes, but it is difficult to see how any injustice has been done to Athanasius Kircher thereby, since the quality of his magnifying glass seems principally a matter of conjecture. If we accept Osler's adjustment of the matter of priority in the bacterial theory of infectious diseases, then the medical fame of the remarkable priest who was also a mathematician, physicist, optician, pathologist, Orientalist, musician and virtuoso, rests rather upon his seven experiments upon the nature of putrefaction[1] than upon his

[1] "Kircher Scrutinium," Romæ, 1658, caput VII., pp. 42–49.